

What Is Claimed Is:

1. A method for providing cooling water to a facility comprising the steps of:
extending at least one pipe under a bottom of a water reservoir; and
delivering ground water from under the bottom of the water reservoir to the facility.
2. The method of claim 1, further comprising the step of filtering the ground water through a sand substrate of the bottom of the water reservoir before delivering thereof to the facility, the water reservoir being a water body selected from the group consisting of oceans, seas, rivers and lakes.
3. The method of claim 1, further comprising the steps of
forming at least one elongated tunnel under the bottom of the water reservoir; and
extending a first pipe within the at least one elongated tunnel, so that the first pipe terminates at a distance from a shore of the water reservoir.
4. The method of claim 3, wherein the step of forming the tunnel includes one of trenching, horizontal directional drilling or tunnel shielding, the method further comprising the step of placing at least one second pipe into the at least one elongated tunnel.
5. The method of claim 4, wherein the first and at least one second pipe extend substantially horizontally.
6. The method of claim 4, wherein the distal ends of the first and at least one second pipe extend transversely to the bottom.
7. The method of claim 4, further comprising the step of providing the distal end of the first and at least one second pipe with a screening assembly configured to filter solid particles from the ground water to avoid pipeline sediment incursion.
8. The method of claim 1, wherein the delivery of ground water from under the bottom of the water reservoir includes providing a pump station on a shore or bank of the water reservoir or on the bottom thereof.

9. The method of claim 1, further comprising the step of discharging the delivered cooling water from the facility into the water reservoir at temperatures minimizing thermal plumes, the facility being an industrial facility selected from the group consisting of power plants, nuclear plants, and desalination plants.

11. The method of claim 4, wherein the first and at least one second pipe are dimensioned uniformly.

12. The method of claim 4, wherein the first and at least one second pipe are dimensioned non-uniformly, the method further comprising arranging the non-uniformly dimensioned first and second pipes in a succession of pipe groups, wherein each successive pipe group has pipes of a uniform length, which is greater than a uniform length of pipes constituting a previous one of the succession of pipe groups.

13. The method of claim 1, wherein the first pipe has a proximal end and a distal end, which extends under the bottom of the water reservoir, the method further comprising the step of extending the proximal end of the first pipe under the bottom or above the bottom.

14. A cooling water intake system comprising a delivery assembly configured to deliver ground waters from under a bottom of a water reservoir to a facility.

15. The cooling water intake system of claim 14, wherein the bottom includes a sand substrate, the delivery assembly comprising at least one tunnel formed under the bottom and extending to a predetermined terminal point offshore, at least one elongated pipe shaped and dimensioned to be received within the at least one tunnel and having a distal end, which extends towards the predetermined terminal point and located under the bottom of the water reservoir at a distance ranging from near shore to about one mile, the at least one pipe being configured to guide ground water filtered through the sand substrate towards the facility, the water reservoir being a water body selected from the group consisting of oceans, seas, rivers and lakes.

16. The cooling water intake system of claim 15, wherein the delivery assembly further comprises a second pipe received in the at least one tunnel and being substantially uniformly sized with the at least one elongated pipe, and a pump assembly in flow communication with proximal ends of the at least one and second pipes and configured to create a negative pressure along the proximal ends of the at least one and second pipes sufficient to draw ground waters under the bottom of the water reservoir through the sand substrate and into the distal ends of the at least one and second pipes, whereas the drawn ground waters are free from planktonic organisms and have a substantially uniform annual temperature.

17. The cooling water intake system of claim 16, wherein the distal ends of the at least one and second pipes extend substantially parallel to or transversely to the bottom and have a filtering assembly configured to separate solid particles from the ground waters.

18. The cooling water intake system of claim 16, wherein the distal ends of the at least one and second pipes are perforated or provided with elongated slots covered by a screening assembly, the screening assembly being woven wire screencloths or wire mesh.

19. The cooling water intake system of claim 18, wherein the elongated slots provided along the distal ends of the at least one and second pipes are linear or helical.

20. The cooling water intake system of claim 17, wherein the filtering assembly includes a membrane covering at least one and second pipes.

21. The cooling water intake system of claim 16, wherein the pump assembly is located on a shore or bank of the water reservoir or is immersed into the water reservoir and is selected from the group consisting of turbine pumps, suction lift self-priming centrifugal pumps, high head submergible pumps and a combination thereof.

22. The cooling water intake system of claim 14, further comprising a discharge system configured to guide discharged cooling water to the water reservoir at a temperature substantially preventing thermal plume.

23. The cooling water intake system of claim 18, wherein the perforations are non-uniformly dimensioned.
24. The cooling water intake system of claim 16, wherein the at least one and second elongated pipes are non-uniformly dimensioned.
25. The cooling water intake system of claim 18, wherein the screening assembly has a screen size of about 0.02 inches (0.5mm).